Controlling Physician Expenditures: A Comparative Analysis in Frustration?

by

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The paper by S. R. Kenny, entitled "Controlling Costs While Maintaining Health Physician Services in Canada," provides a comprehensive picture about one of the most important cost control issues facing the U.S., Canada, and Germany --that is controlling physician expenditures in a fee-for-service payment environment. The paper presents trends in Canadian physician expenditures relative to GNP and discusses these trends in the context of overall Canadian economic performance and Medicare programmatic changes. The author points out that "the story of physician cost control in Canada is the story of significant control over the prices for physician services." General volume trends are also analyzed and the author provides detailed information about the utilization control systems in Quebec (quarterly caps) and British Columbia (global capping).

In discussing this paper from a policy context, three issues need to be addressed. First, the linkages between the physician sector and other parts of the health system are of critical importance. Second, attributing differences in American and Canadian spending trends to specific health systems' features and/or general economic factors is difficult. Third, the need for physician performance measures and a better understanding of the effectiveness of medical services is critical to this debate.

Linkages

The physician is the central decisionmaker in the health system. Physician decisions affect more than 70 percent of all health spending. While we frequently tend to analyze the physician services sector separately, it is equally important to analyze the effects of physician payment policy changes on overall health care costs. This is clearly difficult, given our very limited knowledge about physician behavioral responses to various payment and utilization review changes. The non-definitive 15-year debate about the physician target income hypothesis attests to the difficulty of measuring behavioral response.

Nevertheless, many of the truly effective cost containing organizational and payment methods rely precisely on such linkages and behavioral responses. HMOs and other capitated delivery arrangements have been shown to reduce costs by 25-40 percent, largely through incentives for physicians to limit unnecessary hospital admissions. Conversely, changes in payment for other providers also affect physician behavior. The U.S. hospital DRG system has undoubtedly had a significant impact on both the place and types of services provided by American physicians. In a similar vein, effective case management systems and payment arrangements can provide incentives and information for physicians to "order" community-based instead of institutional long-term care services where appropriate. The point here, using the jargon of economists, is simply that we need to analyze changes in a general as well as partial equilibrium context.

U.S.-Canadian Experience

International comparisons of health care systems are always problematic, given the plethora of factors affecting the demand for and supply of health services. For example, even putting aside the usual demographic and economic factors, it is difficult to compare Canadian and American experiences in controlling physician expenditures because of differences in financing arrangements and differences in physician and other medical care provider payment methods. In 1985 per capita U.S. health spending of $1,765 was 38 percent higher than Canadian spending of $1,279. The U.S. devoted 10.7 percent of its GDP to health compared to 8.4 percent in Canada.1/ Inpatient medical care beds are higher in Canada, 6.9 beds (1982) per thousand population, compared to 5.9 (1981) in the U.S. Similarly, for these same years, inpatient days of care per capita are higher in Canada than in the U.S. (2.1 versus 1.7) and average lengths of stay are longer in Canada than the U.S. (13.3 versus 9.9). In 1982 costs per day of hospital care were $210 in Canada compared to $360 in the U.S., while costs per stay were $3,020 per stay in Canada versus $3,450 in the U.S.2/

Regarding physician supply, while physician population ratios are currently relatively similar, Canada has experienced much higher growth in its physician population ratio between 1960 and the early 1980's, going from 1.2 physicians per thousand population in 1961 to 1.9 in 1982, a 2.8 percent annual increase. The U.S. ratio increased from 1.4 physicians per thousand population in 1960 to 1.9 in 1981, a 1.7 percent annual increase. U.S. physician spending relative to GNP has been continually increasing, while Canadian physician spending has displayed some rather cyclical behavior, increasing from about 1 percent of GNP in 1965 to 1.3 percent in 1985. U.S. physician spending has increased from 1.2 percent of GNP in 1965 to 2.1 percent in 1985 and is projected to reach 2.4 percent by 1990 (Table 1). Physician spending in the U.S. Medicare program has increased from 0.2 percent of GNP in 1970 to 0.4 percent in 1985 and is projected to reach 0.6 percent of GNP in 1990.

In terms of absolute spending levels, Canadian physician spending per capita has increased 12-fold since 1960; U.S. physician spending has increased 11-fold. However, since 1970 per capita physician expenditures in the U.S. have increased significantly faster than those in Canada. In 1985, physician spending in U.S. dollars was $203 per person in Canada compared to $335 per person in the U.S. With regard to price increases, in Canada between 1960 and 1985, the CPI grew about 20 percent more rapidly than the physician fee component of the CPI. In the U.S., the physician fee component of the CPI grew over 40 percent faster than the overall CPI over this same time period (Table 2).

Measuring volume is problematical. Volume (and service intensity) is generally treated as a residual after price and population effects are removed. Both Canada and the United States have faced significant increases in the volume and intensity of physician services[3/]. In 1985 Canadian per capita (price-adjusted) expenditures were 3.6 times higher than they were in 1960, compared to 2.1 times higher for the

U.S. Nevertheless, over the last 10 years, volume and intensity increases have accounted for about half (6.6 percentage points per year) of the increase in U.S. Medicare spending per aged enrollee. The volume/intensity issue is of critical importance given the ability of physicians to offset price constraints by providing either larger numbers of or more intensive services. Indeed, the U.S. experiences with the 1972-74 Economic Stabilization Program's across-the-board fee controls and the 1984-86 Medicare physician fee freeze indicate that savings from the freezes were initially partially offset through volume increases and that, in the longer-term, overall physician spending levels were higher after the freeze was lifted than would have been the case in the absence of the freeze.

Between 1970-1982 physician incomes in absolute (U.S.) dollar terms increased more rapidly in the U.S., going from $41,800 in 1970 to $99,500 in 1982, a 138 percent increased, compared to a 97 percent increase in Canada, $37,800 to $74,590. Relative to average employee incomes, Canadian physicians' incomes have declined from 5.1 times the average employee income in 1970 to 4.2 times in 1982. U.S. physicians' incomes have declined from 5.4 times the average employee income in 1970 to 5.1 times in 1982. Clearly, relative to average employee incomes, Canadian physicians have fared somewhat worse than their U.S. colleagues.

The trends in the physician share of total health care spending are also rather different across the two countries. Canadian physician expenditures accounted for some 16 percent of total health spending in 1965, rising to almost 18 in the early 70's, dropping to 15 percent in 1982 and rising to almost 16 percent in 1985. U.S. physician spending dropped from 20.3 percent of total health spending in 1965 to 18.8 percent in 1975, steadily increased to 19.6 percent in 1985, and is projected to increase to 20.5 percent in 1990 (Table 1). With the exception of a slight decline between 1970 (21.3 percent) and 1975 (20.9 percent), U.S. Medicare physician spending as a percent of total Medicare spending has risen steadily to 23.3 percent in 1985.

These data do suggest a number of obvious points. Americans spend more on health care than Canadians both in absolute dollar amounts and in terms of GDP shares. Americans use fewer inpatient medical care days per person, have shorter hospital stays, and spend more per stay and per day. Physician spending per capita is higher in the U.S. and over the past 15 years has increased at higher rates. Physician fees have increased substantially faster than the CPI in the U.S., but less rapidly than the CPI in Canada. "Volume and intensity" of physician services increased more rapidly in Canada than in the U.S. Thus, while the Canadians have been more successful at controlling physician fee and total expenditure increases, they have faced larger volume/intensity increases than the Americans. The income position of Canadian physicians appears to have worsened relative to their American counterparts.

These comparative trends are what the data show, what they mean in a practical policy sense is a different matter. It is difficult to draw meaningful policy implications about physician payment practices from these data for three reasons:

- It is necessary to isolate all the different factors affecting physician payment;
- The information presented is too aggregate; and
- Given the lack of outcome measures, relative performance per dollar spent cannot be evaluated.

The Canadian paper descriptively relates trends in physician fee patterns and expenditures to the overall performance of the Canadian economy, changes in the number of physicians and the institutional fee setting mechanisms in the provinces. While this analysis is very useful, especially for those not very familiar with the Canadian system, it falls short of being a well developed model that is rigorously analyzed statistically. Furthermore, it is important to relate changes in physician expenditures to changes in hospital supply, hospital payment practices, the availability of and payment practices for diagnostic tests, changes in technology, demand side factors such as cost-sharing and extra-billing, etc. For example in the United States, Medicare physician expenditures increased by almost 30 percent between 1984-1986. During this period Medicare physician fees were frozen; the hospital prospective payment system was being phased-in; a Medicare participating physician program was initiated; a direct billing requirement and fee schedules were implemented for lab services; the Peer Review Organization (PRO) program was implemented; several billing changes, including the implementation of a common procedure coding system, occurred; non-Medicare hospital admissions decreased; and market competition from HMOs and other alternative delivery systems grew. While it is extremely difficult empirically to assess the impact of each of these factors on Medicare physician expenditure growth, the probable impacts, at least on _a priori_ conceptual grounds, need to be considered.

A second and related issue concerns the aggregate level of the spending comparison. Overall trends in prices and "utilization" are useful, but to understand fully what is happening more detailed information by type of service and individual procedure is needed. Information on relative price changes and changes in the volume of specific procedures can provide the policymaker with a better understanding of the factors, especially medical practice patterns and technology, driving physician spending.

For example, Table 3 provides some interesting information about the shifts in numbers and places of physician services that are occurring simultaneously with the phase-in of the hospital prospective payment system. Detailed analyses at the procedure level have shown that most of the recent increase in expenditures for outpatient surgery is due to both an increase in the number (perhaps technologically-induced) and movement from inpatient to outpatient setting of cataract operations (perhaps PRO and hospital prospective payment system induced). Similarly, much of the increase in diagnostic testing is due to increases in the number of colonoscopies. Analyses such as these at the procedure level that focus on high volume, high cost, and/or high expenditure procedures are essential for understanding what lies behind the overall trends.

Measuring Performance

Lastly, the ultimate question we need to answer is how well do our systems perform in terms of providing "good health." Is the Canadian or American system more efficient in terms of providing better outcomes per dollar spent? Unfortunately, except for gross measures such as mortality, it is difficult to define outcomes and to relate more precisely outcomes to specific interventions. We need to develop better outcome measures as well as have a better understanding about the appropriateness and effectiveness of various medical and surgical procedures.

The U.S. Government is putting a major emphasis on effectiveness research. Many medical and surgical procedures become common practice without careful evaluation of their effects. New technologies must be evaluated against alternative methods of treating specific conditions on both medical and cost-effectiveness grounds. Physicians, insurers and governments must work together to disseminate information about both effective and ineffective existing and emerging technologies. Education programs, coverage rules, payment systems, and quality review programs should assure that only medically appropriate and effective services are rendered to program beneficiaries.

In summary, controlling physician expenditures necessitates:

- having appropriate incentives across all provider types;
- being able to deal with price, volume, and intensity of services interactions; and
- assuring that medically appropriate and effective services are rendered.

Serious efforts to come to grips with these issues are only beginning.

Footnotes

1. See Statement of George J. Schieber Before Joint Economic Committee, Subcommittee on Education and Health, May 3, 1988.

2. See Financing and Deliverying Health Care, OECD, Paris, 1987.
   For another perspective see Morris L. Barer and Robert G. Evans, "Riding North on a South Bound Horse? Expenditures, Prices, Utilization and Incomes in the Canadian Health Care System" in Robert G. Evans and Greg L. Stoddart (eds), Medicare at Maturity Achievements, Lessons and Challenges, The University of Calgary Press, Alberta, Canada, 1986.

3. See Statement of William L. Roper, M.D. Before the Subcommittee on Health, Committee on Ways and Means, House of Representatives, May 24, 1988.

Table 1

Gross national product (GNP) national health care (NHC) expenditures, national physician expenditures, Medicare expenditures, and Medicare physician expenditures: Selected calendar years, 1965-90

		NHC Expenditures					Medicare expenditures						
		Total		Physician			Total			Physician			
Calendar year	GNP	Amount	Percent of GNP	Amount	Percent of GNP	Percent of NHC	Amount	Percent of GNP	Percent of NHC	Amount	Percent of GNP	Percent of NHC Expenditures	Percent of Medicare Expenditures
						(in billions)							
1965	$691.0	$41.9	6.1	8.5	1.2	20.3	--	--	--	--	--	--	--
1970	992.7	75.0	7.6	14.3	1.4	19.1	7.5	0.8	10.0	1.6	0.2	2.1	21.3
1975	1,549.2	132.7	8.6	24.9	1.6	18.8	16.3	1.1	12.3	3.4	0.2	2.6	20.9
1980	2,732.0	247.5	9.1	46.8	1.7	18.9	36.8	1.3	14.9	7.9	0.3	3.2	21.5
1981	3,052.6	285.2	9.3	54.8	1.8	19.2	44.7	1.5	15.7	9.7	0.3	3.4	21.7
1982	3,166.0	321.2	10.1	61.8	2.0	19.2	52.4	1.7	16.3	11.4	0.4	3.5	21.8
1983	3,405.7	355.1	10.4	68.4	2.0	19.3	58.8	1.7	16.6	13.4	0.4	3.8	22.8
1984	3,765.0	387.4	10.3	75.4	2.0	19.5	64.6	1.7	16.7	14.7	0.4	3.8	22.8
1985	3,998.1	422.6	10.6	82.8	2.1	19.6	72.3	1.8	17.1	16.9	0.4	4.0	23.3
1986	4,206.1	458.2	10.9	92.0	2.2	20.1	77.7	1.8	17.0	19.0	0.5	4.1	24.5
1987 1/	4,432.2	496.6	11.2	101.4	2.3	20.4	80.8	1.8	16.3	22.0	0.5	4.4	27.2
1988 1/	4,733.6	541.7	11.4	110.7	2.3	20.4	92.4	2.0	17.1	24.9	0.5	4.6	26.9
1989 1/	5,044.3	591.1	11.7	120.9	2.4	20.5	103.2	2.0	17.5	28.0	0.6	4.7	27.1
1990 1/	5,414.3	647.3	12.0	132.6	2.4	20.5	115.8	2.1	17.8	31.5	0.6	4.9	27.2
Average annual rate of growth 1970-86	9.4	12.0	--	12.3	--	--	15.7	--	--	16.7	--	--	--

1/ Represents projected estimates.

SOURCE: Office of the Actuary, National Health Expenditures.

Table 2
National/Medical Care Price Indicators
(1967=100)

	CPI, all items		CPI, all services		Medical care								
						Medical care services						Medical care commodities	
							Hospital service charge						
Fiscal year 1/	Total	Less medical	Total	Less medical	Total	Total	Total 2/	Hospital room 3/	Operating room charges	Physicians' services	Dentists' services	Total	Prescription drugs
Year ending June:	Average annual index												
1950	70.9	NA	57.7	NA	53.0	48.7	--	29.7	--	54.7	63.1	87.6	--
1955	80.2	NA	70.1	NA	64.0	59.6	--	41.4	--	64.3	72.8	94.1	--
1960	88.0	88.8	82.2	83.9	77.8	73.5	--	55.4	--	76.1	81.5	104.8	--
1965	93.6	94.1	91.2	92.1	88.3	85.9	--	4/ 73.9	4/ 81.2	4/ 86.8	4/ 90.8	100.3	--
1966	95.7	96.0	93.6	94.5	90.9	89.0	--	78.4	85.1	90.2	93.4	100.3	--
1967	98.6	98.8	98.0	98.4	96.8	96.1	--	92.0	93.9	96.9	97.6	100.4	101.1
1968	101.9	101.9	102.3	102.1	103.0	103.7	--	106.7	105.5	102.8	102.7	100.1	99.0
1969	106.8	106.7	108.7	108.3	109.7	111.6	--	121.1	119.9	109.0	108.8	100.6	98.6
1970	113.1	113.0	116.9	116.6	116.7	119.8	--	136.6	135.2	117.0	116.1	102.2	100.5
1971	119.0	118.7	125.4	124.9	124.8	129.1	--	154.7	149.7	125.8	123.1	104.7	101.0
1972	123.3	122.9	131.0	130.3	130.7	136.0	--	169.3	162.4	132.3	130.1	105.6	101.4
1973	128.2	127.9	135.6	134.9	134.7	140.9	103.7	177.8	174.1	135.7	134.1	105.7	100.6
1974	139.7	139.6	144.4	143.6	142.4	149.9	108.7	188.4	185.8	142.5	140.0	106.8	101.0
1975	155.2	154.9	160.0	158.4	160.2	169.9	124.0	219.3	222.4	160.7	155.1	114.3	106.1
1976	166.2	165.6	173.5	171.2	176.5	187.9	140.6	252.6	255.9	179.0	167.1	122.5	112.3
Sept.:													
1975	158.4	158.1	163.4	161.6	164.6	174.7	128.3	228.0	231.7	165.0	158.7	116.6	107.8
1976	168.4	167.7	177.1	174.6	180.5	192.3	144.8	260.6	265.2	183.9	169.5	124.2	113.8
1977	178.7	177.5	190.7	187.2	198.0	211.9	160.2	291.9	302.6	201.6	181.7	131.9	120.1
1978	191.3	189.9	206.1	202.3	214.8	230.3	NA	322.8	NA	218.7	194.7	141.1	129.2
1979	211.0	209.6	227.2	223.1	234.3	252.2	NA	361.1	NA	238.2	210.5	151.1	139.2
1980	239.7	238.4	261.6	257.8	259.4	280.2	NA	405.0	NA	262.5	233.5	164.1	151.3
1981	266.2	264.8	295.9	292.4	286.2	309.1	NA	463.0	NA	290.8	257.1	181.6	167.5
1982	286.0	283.9	328.9	324.7	320.2	346.6	NA	538.8	NA	320.9	279.6	200.9	187.3
1983	296.0	292.9	341.7	335.2	351.6	380.9	NA	605.4	NA	346.1	296.7	219.3	208.9
1984	308.1	304.4	358.2	350.9	373.9	404.5	NA	658.7	NA	371.2	321.3	235.4	228.9
1985	319.4	315.1	376.8	368.9	396.8	428.2	NA	702.5	NA	392.6	343.4	252.5	251.2
1986	327.3	321.9	396.1	386.7	425.5	459.7	NA	740.1	NA	419.9	362.3	269.4	272.9
1987	336.7	330.2	412.8	401.7	455.5	492.6	NA	793.8	NA	451.8	385.5	286.8	295.0
1988 6/	349.8	--	--	--	--	--	--	--	--	483.9	--	--	--
1989 6/	365.2	--	--	--	--	--	--	--	--	518.7	--	--	--
1990 6/	383.5	--	--	--	--	--	--	--	--	556.6	--	--	--
1991 6/	402.3	--	--	--	--	--	--	--	--	595.0	--	--	--

See footnotes at end of table.

Table 2 - Continued
National/Medical Care Price Indicators
(1967=100)

	CPI, all items		CPI, all services		Medical care								
						Medical care services						Medical care commodities	
							Hospital service charge						
Fiscal year 1/	Total	Less medical	Total	Less medical	Total	Total	Total 2/	Hospital room 3/	Operating room charges	Physicians' services	Dentists' services	Total	Prescription drugs
Year ending June:	Percentage change from preceding year 5/												
1960	1.4	1.3	3.3	3.2	3.9	4.4	--	5.9	--	3.0	2.3	1.3	--
1965	1.3	1.3	2.0	1.5	2.1	2.6	--	5.3	3.3	3.1	2.9	0.4	--
1966	2.2	2.0	2.6	2.6	2.9	3.6	--	6.1	4.8	3.9	2.9	--	--
1967	3.0	2.6	4.7	4.1	6.5	8.0	--	17.3	10.3	7.4	4.5	0.1	--
1968	3.3	3.1	4.4	3.8	6.4	7.9	--	15.9	12.4	6.1	5.2	-0.3	-2.1
1969	4.8	4.7	6.3	6.1	6.5	7.6	--	13.5	13.6	6.0	5.9	0.5	-0.4
1970	5.9	5.9	7.5	7.7	6.4	7.3	--	12.8	12.8	7.3	6.7	1.6	1.9
1971	5.2	5.0	7.3	7.1	6.9	7.8	--	13.3	10.7	7.5	6.0	2.4	0.5
1972	3.6	3.5	4.5	4.3	4.7	5.3	--	9.4	8.5	5.2	5.7	0.9	0.4
1973	4.0	4.1	3.5	3.5	3.1	3.6	--	5.0	7.2	2.6	3.1	0.1	-0.8
1974	9.0	9.1	6.5	6.4	5.7	6.4	4.8	6.0	6.7	5.0	4.4	1.0	0.4
1975	11.1	11.0	10.8	10.3	12.5	13.3	14.1	16.4	19.7	12.8	10.8	7.0	5.0
1976	7.1	6.9	8.4	8.1	10.2	10.6	13.4	15.2	15.1	11.4	7.7	7.2	5.8
Sept.:													
1975	10.3	10.2	10.3	9.8	12.5	13.1	15.1	17.3	20.5	12.7	10.9	8.1	5.9
1976	6.3	6.1	8.4	8.0	9.7	10.1	12.9	14.3	14.5	11.5	6.8	6.5	5.6
1977	6.1	5.8	7.7	7.2	9.7	10.2	10.6	12.0	14.1	9.6	7.2	6.2	5.5
1978	7.1	7.0	8.1	8.1	8.5	8.7	--	10.6	--	8.5	7.2	7.0	7.6
1979	10.3	10.4	10.2	10.3	9.1	9.5	--	11.9	--	8.9	8.1	7.1	7.7
1980	13.6	13.7	15.1	15.6	10.7	11.1	--	12.2	--	10.2	10.9	8.6	8.7
1981	11.1	11.1	13.1	13.4	10.3	10.3	--	14.3	--	10.8	10.1	10.7	10.7
1982	7.4	7.2	11.2	11.0	11.9	12.1	--	16.4	--	10.4	8.8	10.6	11.8
1983	3.5	3.2	3.9	3.2	9.8	9.9	--	12.4	--	7.9	6.1	9.2	11.5
1984	4.1	3.9	4.8	4.7	6.3	6.2	--	8.8	--	7.3	8.3	7.3	9.6
1985	3.7	3.5	5.2	5.1	6.1	5.9	--	6.6	--	5.8	6.9	7.3	9.7
1986	2.5	2.2	5.1	4.8	7.2	7.4	--	5.4	--	7.0	5.5	6.7	8.6
1987	2.9	2.6	4.2	3.9	7.1	7.2	--	7.3	--	7.6	6.4	6.4	8.1
1988 6/	3.9	--	--	--	--	--	--	--	--	7.1	--	--	--
1989 6/	4.4	--	--	--	--	--	--	--	--	7.2	--	--	--
1990 6/	5.0	--	--	--	--	--	--	--	--	7.3	--	--	--
1991 6/	4.9	--	--	--	--	--	--	--	--	6.9	--	--	--

1/ Revisions to scope, concept, and methodology related to the CPI, beginning in January 1978, make comparisons with earlier periods tenuous, as the good or service price in 1978 may differ from that priced in 1977 and prior. Also, shifts of the weights assigned to various goods and services have altered the composition of aggregate indexes such as "all items" and "medical care". For changes in titles of components and in definitions, see Bureau of Labor Statistics, CPI Detailed Report, January 1978.

2/ January 1972=100.

3/ Revised title. Prior to January 1978 reflects semi-private room charges.

4/ Data not reported for March 1964 and 1965. Price indexes derived by averaging surrounding quarterly indexes.

5/ Based on sum of monthly figures for given years.

6/ Estimates for 1988-91 were rebased using 1982 as the base year (1982=100).

SOURCE: HCFA/OACT and Bureau of Labor Statistics, U.S. Department of Labor

Table 3

MEDICARE: Number of services by selected type and place of service: Calendar years 1982 to 1986

Type and place of service	1986	1985	1984	1983	1982
	Numbers in millions				
Medical					
Office	166.7	161.6	147.1	137.6	131.2
Inpatient	97.1	104.9	110.0	119.7	118.6
Outpatient	15.7	14.6	12.9	11.4	10.4
Surgical					
Office	22.9	19.5	15.9	14.8	13.5
Hospital	8.0	8.3	8.6	8.4	8.0
Outpatient	4.4	3.8	1.6	1.6	1.4
Consultations - all places	11.8	10.3	9.3	8.6	7.8
Diagnostic x-rays - all places	63.1	58.6	55.9	49.9	46.5
Assistant at surgery	1.1	1.3	1.2	1.1	1.1

SOURCE: Charles Fisher, "Trends in Medicare Fee-For-Service Expenditures and Utilization for Physicians and Other Non-Institutional Medical Suppliers, 1983 to 1986," Health Care Financing Review, Forthcoming.

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